justice national summit of grassroots groups held in Washington, D.C. 1992 Thirty-five thousand people from 178 countries attend nonsmokers. EPA implements strategy governing hazardous waste incinerators and industrial furnaces. Curbside recycling triples

HEALTHY ECOSYSTEMS

The Dynamic Interaction of Habitat and People

"In all things of nature there is something of the marvelous" —Aristotle

EPA Southeast has almost one-third of the total shoreline in the continental United States, and currently 35 percent of the population in the Southeast resides along the coasts. Nationally, it is estimated that by the year 2015, more than 75 percent of the U.S. population will live, work and play along the nation's coasts.

Six of the eight southeastern states boast coastal land—Alabama, Georgia, Florida, Mississippi, North Carolina and South Carolina. However, all eight states contribute to the southeastern coastal watershed. (***Watershed***—a common outlet—river, lake, bay or ocean—into which water, sediments and dissolved materials drain.) The southeastern coastal watershed begins at the headwaters of our region's streams, rivers and wetlands, all of which eventually drain into our coastal waters. While on their journey to the sea, these waters pass through farming, residential, business and forested areas picking up pollutants such as metals, excessive nutrients, pathogens and debris. All of these pollutants are then deposited into our nearshore waters and onto the beaches of our coasts.

Our coastal waters and watersheds provide food, recreation, education, ports and marinas. These waters also help protect us from severe weather impacts and support fishing, shipping and other industrial activities. Coastal waters are a very valuable part of the Southeast and of our nation's economy. For example, the Gulf of Mexico provides more than 40 percent of the total U.S. commercial fish yield. Sales of seafood from the Gulf of Mexico are worth two billion-dollars annually.

The health of the coastal watershed is intimately linked with the health of the nearshore ecosystem. Nearshore waters provide a unique habitat for a variety of plants and animals. Sea grasses and other aquatic plants living in these waters provide food and shelter for many fish

the United Nations Earth Summit in Rio de Janeiro. 1993 EPA reports secondhand smoke poses a serious health risk to from 7% in 1970 to nearly 22% in 1993. 1994 The American bald eagle is upgraded from an endangered to threatened species.

A hiker enjoys the scenic beauty of the Appalachian Mountains

and shellfish. Many marine organisms, including most commercially valuable fish species, depend on nearshore waters at some point during their development. So vital are nearshore waters that 80 percent of all fish species in the United States depend on them for their primary habitat.

Estuaries are also an important component of the health of the coastal watershed ecosystem. (***Estuary***—a partially enclosed body of water formed where fresh water from rivers, streams and groundwater flow to the ocean, mixing with salt water.) Recognizing that estuaries provide critical habitats necessary for the survival of tens of thousands of birds, mammals, fish and other wildlife, EPA implemented a National Estuary Program (NEP) in 1987. This program brings together federal, state and local agencies, and the community in the six NEPs of EPA Southeast to restore and protect estuaries serving as habitats and nursery grounds for two-thirds of our nation's commercial fish and shellfish.

EPA SE helps protect our region's diverse ecosystems

Coastal watersheds and estuaries are very vulnerable to the effects of pollution that can impact human health and the environment. These coastal waters are greatly stressed by people and events like: overuse, toxic urban runoff, soil runoff, runoff from fertilizers, storm water and animal waste runoff, acid rain deposits, bacteria from faulty septic tanks and sewage treatment plants, medical waste and boat and marina waste. Additionally, watersheds are adversely affected by habitat alteration from the filling of marshes, wetlands and tidal flats as well as construction and other land clearing activities.

EPA Southeast has seen the devastating effects of various forms of coastal pollution. There were 136 beach closings and advisories in the Southeast in 1999; of these closings, 15 were permanent closings or advisories (i.e., more than 12 weeks in duration, or lasting for one entire beach season). The primary causes of the 1999 beach closings and

EPA Southeast's Southern Appalachian Ecosystem

The Southern Appalachians are one of the most biologically diverse, temperate ecosystems in the world. The mountain chain runs through the southeastern states of Alabama, Georgia, Kentucky, South Carolina and Tennessee. It is home to an estimated 80 species of amphibians and reptiles, 175 species of birds, 65 species of mammals, a large number of plants and trees and the headwaters of four major southeastern rivers. The Appalachian ecosystem experienced many changes during the early 20th century largely due to land management practices that exploited the natural resources. This exploitation resulted in eroding cropland and pastures, heavily logged forests with little economic value and related environmental harm. With the assistance of federal, state and local communities, restoration and conservation began and national forests were created. As the 21st century begins, the Southern Appalachians are on the mend.

President Bill Clinton orders government agencies to make environmental justice part of their mission. Superfund cleanups launched with grants to communities to revitalize inner-city abandoned, contaminated sites and return them to productive use.

"Dead Zone" in the Gulf of Mexico

Up to 7,000 square miles of the Gulf of Mexico are totally devoid of life for several months of the year. This "dead zone" is caused by pesticides and fertilizers washing off agricultural lands in the Mississippi River's watershed and traveling downstream into the Gulf. Each spring and summer, the massive amounts of nitrogen in these products trigger a growth of algae that strips the Gulf water of oxygen. Low oxygen conditions kill most bottom-dwelling organisms, including starfish and many single-celled animals.

The long-term economic, ecological and biological effects of this recurring event could be devastating. For example, fishermen who make their living from the Gulf have to travel farther out into deeper waters for the same catch. This takes time and extra fuel, which is then passed on to the consumer in higher prices.

The dead zone is an example of what happens in coastal estuaries around the country. Seasonally, large amounts of nitrogen-rich compounds enter the nation's estuaries as runoff upsetting the delicate chemical and biological balance. It's also an example of how a harmful environmental event can occur far from the source that caused it.

advisories were as follows: 56 percent were due to bacteria levels exceeding beach water safety standards, usually from sewage or storm water discharges; four percent were due to a known pollution event such as a spill; and 40 percent were initiated as a precautionary measure after known polluted rains fell in swimming waters.

Working to protect our ecosystems for future generations to enjoy

EPA Southeast views our watershed and its ecosystems as a whole system that is intimately tied together. What happens in one part of the watershed often affects another part, sometimes hundreds of miles away. EPA Southeast assists states in assessing the quality of their watersheds and in applying established watershed protection plans. We also oversee the wetland permitting process, provide financial assistance to states, territories and Tribes to promote watershed planning and management, and provide information to you, the citizens we serve, so that you can make wise environmental choices.

Here's What You Can Do to Help Keep Our Ecosystems Healthy:

- *Use pesticides and fertilizers sparingly and correctly, remembering that what runs off your yard will eventually end up in our watersheds and coastal waters.*
- *Choose environmentally friendly products and compost organic waste.*
- *Practice good housekeeping by properly disposing of toxic substances like paint, paint thinners, automotive fluids and cleaning products.*
- *Curb your dog and properly dispose of pet waste. Do not leave it on the ground or throw it down a storm drain.*
- *Maintain your septic tank.*
- *Pick up litter and properly dispose of your trash.*
- *Practice water conservation.*
- *Properly maintain your boat, use pump-out facilities, and operate your boat in a responsible way to avoid shoreline erosion and harming sensitive aquatic environments.*

accelerate, resulting in as many cleanups in 12 months as were completed in Program's first decade. Brownfields Program is

List of toxic chemicals reported to public under community right-to-know laws doubles. 1995 Region 4 identifies numerous